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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/886,979

01/15/2002

Jacob Malkin

US

8265

27557

7590

08/10/2004

EXAMINER

ANGEBRANDT, MARTIN J

BLANK ROME LLP

600 NEW HAMPSHIRE AVENUE, N.W.

WASHINGTON, DC 20037

ART UNIT

PAPER NUMBER

1756

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/886,979

Applicant(s)

LEVICH ET AL.

Examiner

Martin J Angebrannt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06/30/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 55-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 55-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1 The response provided by the applicant has been read and given careful consideration. Responses to the arguments are presented after the first rejection to which they are directed. Prosecution is reopened based upon the petition to revive filed 12/31/2003 and the RCE filing of 6/30/04.

2 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3 Claims 55 and 58-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettijohn et al. '904, in view of Keller, K, ed. and Russell '031.

Pettijohn et al. '904 teaches the exposure of a silver halide photographic film and development to produce a silver negative image. The silver image is bleached using potassium ferricyanide ( $K_3 [Fe(CN)_6]$ ) and potassium iodide (KI), followed by a rinse to remove the excess bleach. The treatment of the resulting silver iodide image with fluorescent dyes Acridine Orange, Acriflavine, Pyronin GS, Rhodamine B and Safranin T together with the times of contact are disclosed in the table in column 4.

Keller, K, ed. "Science and Technology of Photography", © 1993 VCH, pp 43-82, 119 and 136 teaches that photographic films with different sensitized layer commonly have interlayers between the differently sensitized layers. (pages 75, 119 and 136) The formation of emulsions including the formation of the silver halide salts and the emulsion is disclosed. (pp 43-62) The size of the grains are disclosed with respect to figure 28 on page 61. The coating of

several emulsions is disclosed with respect to figure 35e and 35f. and on page 78. Chemical sensitization is discussed on pages 56-57 and spectral sensitization including the use of cyanine dyes is disclosed on pages 13-23.

Russell '031 teaches the use of UV, visible and IR light with the recording media described. (3/34-38) Figures 4-7 exemplify the case where recording layers are different colored materials, such as photographic film, photoluminescent materials or inks. (5/38-52, 6/45-52, 6/62-7/2 and 7/24-39). The disc shape of the recording media are shown in figures 2 and 3a.

It would have been obvious to one skilled in the art to use conventional production methods disclosed by Keller, K, ed., including forming the silver halide salts, sensitizing them spectrally using known spectral sensitization dyes and chemically using sulfur and gold compounds to form the photographic film of Pettijohn et al. '904 used in the disclosed process and/or to use the result of Pettijohn et al. '904 alone or in view of Keller, K, ed. to form multilayered recording media such as those disclosed by Russell '031, who teaches the use of luminescent materials and photographic film for that purpose and that the result is increased storage capacity.

The examiner notes that this rejection includes a reference to optical recording media and that medium specifically describes the use of photographic materials and as either of the references specifically describes photographic materials they are analogous. The coating process is disclosed with respect to figures 35e and 35f. and on page 78 of Keller, K, ed. contrary to the arguments offered by the applicant The rejection is maintained.

The applicant may wish to review the parent application as well as the instant specification concerning the recited dye coated microparticles being derived from photosensitive materials, but no longer being photosensitive in the photographic matter . (ie exposure to light followed by development, etc.). The Pettijohn et al. '904 reference starts out with a photographic emulsion, which is exposed, bleached and toned to produce dyed areas which are

inherently luminescent. (These use the same dyes as in the specification.) This is the same process taught in the specification with respect to examples 1-4 (making the photographic silver halide emulsion) and 11-24 which teach the bleaching/conversion of the silver particles followed by toning by coating these particles with a dye. The examiner notes that the claims do not describe the medium as being recorded on, but the arguments are as if they were. The Keller, K, ed. "Science and Technology of Photography", © 1993 VCH, pp 43-82, 119 and 136 establishes conventional sizes for the silver particles as well as conventional sensitizing dyes. The Russell '031 clearly establishes that the use of multilayered recording media comprised of exposed and developed photographic emulsions and luminescent materials is old and well known in the art. The luminescence processes (fluorescence or phosphorescence) require absorption of the light to excite the molecule (or atom) to a higher energy level. The use of light, particularly UV, as taught by Russell '031 inherently can bleach the dyes to render them colorless and hence unable to absorb light to initiate fluorescence or phosphorescence. Bleaching these areas renders them different from the unbleached areas and therefore a different "digital" state and written information. Contrary to the position of the applicant, the teachings of Russell '031 of luminescent/fluorescent/phosphorescent recording layer materials as well as photographic emulsions renders these references entirely congruent. With respect to the issue of multiples layers, the Pettijohn reference teaches treatment one layer at a time and the use of different dyes, but Russell '031 teaches lamination of multiples layers. Therefore, the applicants point is without merit. The rejection stands.

The applicant argues that the particle sizes are not taught in the prior art cited. The examiner points to Keller, K, ed. "Science and Technology of Photography", © 1993 VCH, figure 28 on page 61 which establishes the sizes of silver halide crystals (and the resulting silver particles which are derived from their development) within the art. For fine grain (high resolution) emulsions these are common sizes (see James below). The examiner also holds that

other, larger particles may be present, and that due to the polydispersity of commercial emulsions at least some 0.2 micron or smaller grains would be present. The microparticles are originally silver halide particles which were exposed, developed (which converts them from silver halide to silver metal, ie silver particles), bleached and then toned using the dyes. (see the instant specification and abstract). The silver halide is no longer present once a fixing agent is used, so the argument is technically incorrect. The examiner points out that the claims (correctly) do not recite silver halide microparticles. The arguments that the motivation to combine the references is not present ignores the direction within Russell '031 to (developed) photographic emulsions and the use of luminescent materials as well as light absorbing materials (dyes, couplers, etc). The contention that the result would be inoperative is flawed. Several single layers of Pettijohn et al. '904 and toned (colored) differently, may be separated by interlayers as discussed in Russell '031. The treatment of plural layers by the tone process is more explicitly described by Peterson '023 and Gaspar '122 cited below.

4 Claims 55 and 58-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettijohn et al. '904, in view of Keller, K, ed. and Russell '031, further in view of Seyewetz, A., "A Review of Dye-Toning Processes", The British Journal of Photography, pp 611-614 (10/10/24).

Seyewetz, A. teaches other old and well known variations on processes where the silver image is transformed to silver halides, silver ferrocyanides (with cobalt, iron, lead, copper or uranium), silver/chromium compounds, silver compounds formed from the reaction with quinones and alkali bromides, sulphocyanates or silver and copper and silver sulphide on pages 611-613. Useful dyes are disclosed on page 614 and include Azo dyes, eosine, erythrosine, fuchsine, rhodamine S, acridine dyes, Nile blue, Capri blue, and others.

In addition to the basis above, the examiner holds that it would have been obvious to use other methods and compositions which are old and well known in the art to enable dye toning in

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place of that specifically used in the process of Pettijohn et al. '904 as modified by Keller, K, ed. and/or Russell '031 with a reasonable expectation of achieving comparable results.

The examiner notes that other references are cited to provide the multilayer teaching and therefore the issue of one references not teachings every part of the claims is irrelevant. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The rejection stands for the reasons provided above.

5 Claims 55 and 58-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettijohn et al. '904, in view of Keller, K, ed. and Russell '031, further in view of Seyewetz, A., "A Review of Dye-Toning Processes", The British Journal of Photography, pp 611-614 (10/10/24), Peterson '023 and Gaspar '122.

Peterson '023 teaches in example 3 the treatment of a three pack, where three differently sensitized layers are successively dyed after development of all three layers and bleaching them. The use of intervening layers is specifically disclosed. (3/70-73)

Gaspar '122 teaches the treatment of a photographic film having two emulsions which are differently sensitized which are exposed, developed and treated to produce mordanting particles in place of the silver in all the layers. Both layers are then dyed blue (with fuchsin) and then the topmost layer is decolorized using nitric acid and colored a different color using resourcin. (1/80-2/24). The use of other dyes is also disclosed. (2/25-49 and 2/126-147). The use of intervening layers is specifically disclosed. (1/85-87)

In addition to the basis above, it would have been obvious to one skilled in the art to preform the dye-toning treatments in multi-emulsion photographic media, using the techniques disclosed by Peterson '023 and Gaspar '122 rather than differently sensitized emulsions on

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separate substrates as taught by Pettijohn et al. '904 as modified by Keller, K, ed. and Russell '031 together with Seyewetz, A., "A Review of Dye-Toning Processes", The British Journal of Photography, pp 611-614 (10/10/24) with a reasonable expectation of success as this is old and known in the art and would allow full color images to be formed with out possible errors in registration which results from the different substrates.

The examiner relies upon the basis provided above without further comment as no further argument were directed at this rejection beyond those addressed above.

6 Claims 55 and 58-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettijohn et al. '904, in view of Keller, K, ed. and Russell '031, further in view of Seyewetz, A., "A Review of Dye-Toning Processes", The British Journal of Photography, pp 611-614 (10/10/24), Peterson '023, Gaspar '122 and Asami et al. '978.

Asami et al. '978 teaches the formation of images in color photographic media using lasers which are digitally controlled with respect to figure 2. This increases the range of types of images, which can be produced. (col 1)

In addition to the basis for the rejection discussed above, the examiner holds that it would have been obvious to one skilled in the art to use known means, such as those disclosed by Asami et al. '978 to digitally write data in the media of Pettijohn et al. '904 as modified by Keller, K, ed., Russell '031, Seyewetz, A., "A Review of Dye-Toning Processes", The British Journal of Photography, pp 611-614 (10/10/24), Peterson '023, and Gaspar '122 with a reasonable expectation of gaining the benefits described by Asami et al. '978, including increased flexibility in the images produced.

The rejection stands for the reasons provided above.

7 Claims 55 and 58-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pettijohn et al. '904, in view of Keller, K, ed. and Russell '031, further in view of Seyewetz, A., "A Review of Dye-Toning Processes", The British Journal of Photography, pp 611-614



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(10/10/24), Peterson '023, Gaspar '122 and Asami et al. '978, further in view of Tauleigne et al. '917, Kelly GB 160137, Crabtree '962, von Arx GB 472346 or Crabtree '742.

Tauleigne et al. '917 teach the after exposing and processing a photographic film so that the sulfite is removed, the image is plunged into a solution of copper chloride causing the image to whiten due to the formation of silver chloride or silver/copper chloride. The transformation to the bromide can be made using a solution of ferric bromide rather than copper chloride and the transformation to the ferrocyanide can be made using a solution of ferrocyanide rather than copper chloride. The result is treated with potassium iodide and then dipped in colorant such as Fuchsin, rosaniline, methylene blue or auromin. (page 1/lines 46-97)

Kelly GB 160137 teaches treatment of a photographic material which has been exposed and developed and bleached using copper or chromium salts and then dyed with azo or acid dye, such as ponceaus, fast reds, fast greens, fast blues, acid fuchsine and yellows. (1/59-2/63 and 2/64-3/35). The examiner notes that the HCl, copper sulfate and bichromate are present and the resulting combination meets the claim limitations.

Crabtree '962 teaches treatment of a photographic material which has been exposed and developed and bleached using copper sulfate and potassium ferricyanide and then dyed with any of Tannin Heliotrope, rhodamine 6G, thioflavin, methyl green, victoria blue and methylene blue. (1/41-2/70)

von Arx GB 472346 teaches treatment of a photographic material which has been exposed and developed and bleached using zinc sulfate and potassium ferricyanide and then dyed with malachite green.

Crabtree '742 teaches treatment of a photographic material which has been exposed and developed and bleached using chromic acid and potassium ferricyanide, treated with ferrous sulfate and a solution of thiosulfate and then dyed with one of an acidic alizarin dye.

In addition to the basis for the rejection discussed above, the examiner holds that it would have been obvious to one skilled in the art to use other well known known means for performing the oxidation of the silver image, such as those disclosed by of Tauleigne et al. '917, Kelly GB 160137, Crabtree '962, von Arx GB 472346 or Crabtree '742 in the process of Pettijohn et al. '904 as modified by Keller, K, ed. and Russell '031 combined with Seyewetz, A., "A Review of Dye-Toning Processes", The British Journal of Photography, pp 611-614 (10/10/24), Peterson '023, Gaspar '122 and Asami et al. '978 with a reasonable expectation of being able to preform the oxidation based upon the well recognized equivalent function within the art of these oxidants for silver in photographic materials.

8 The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11 Claims 55-60 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12 of U.S. Patent No. 6,265,140, in view of either of Peterson '023 and Gaspar '122 combined with Russell '031.

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It would have been obvious to modify the invention of claims 10-12 of U.S. Patent No. 6,265,140 by having plural layers differently toned as this is old and well known in the art as evidenced by either of Peterson '023 and Gaspar '122 and would clearly be useful in the optical recording media art based upon the well known use of multiple layers of different colored (including differently colored luminescent materials) photographic emulsions in the optical recording media art as evidenced by Russell '031.

11 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

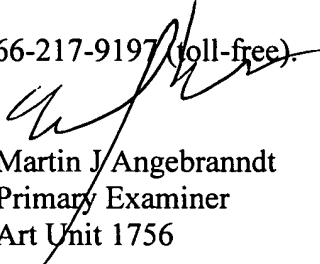
T.H. James, *The Theory of the Photographic Process*", Fourth Ed. (1977) pp. 100-102 discloses that in commercial emulsions, grain sizes vary widely from 0.02 microns to one microns and several microns for specialized emulsions for X rays.

12 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J. Angebranndt  
Primary Examiner  
Art Unit 1756

08/05/2004